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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,362	07/23/2003	Jiafu Fang	42053-00106USPT	8220

24238 7590 06/29/2005

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EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,362

Applicant(s)

FANG ET AL.

Examiner

Michael J. Feely

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1003,0304.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 5, 7-9, 12, 15, 17, 19, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Evans et al. (US Pat. No. 3,047,535).

Regarding claims 1-3, 5, 7-9, 12, 15, 17, 19, and 25, Evans et al. disclose: (1) a treated article (column 1, lines 14-25; column 2, line 54 through column 3, line 23) and (2) a method of manufacturing a treated surface (column 1, lines 14-25) comprising applying a hydrophobic

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surface treatment composition to the surface of a substrate, said composition comprising a mixture or reaction product of (i) a silicone fluid comprising an alkyl silane or a polysiloxane of the formula *see claim for formula* (column 1, lines 55-59); and (ii) a solvent (column 1, lines 55-59);

(3) wherein the hydrophobic surface treatment composition is substantially free of an external curing agent (column 2, line 54 through column 3, line 17);

(5) wherein the hydrophobic film composition further comprises a catalyst (column 2, line 54 through column 3, line 17); (15) wherein the catalyst is an acid or a metal salt of an organic acid (column 2, line 54 through column 3, line 17); (17) wherein the acid is selected from the group consisting of acetic acid, sulfuric acid, nitric acid, phosphoric acid, and hydrochloric acid (column 2, line 54 through column 3, line 17); (19) wherein the metal is selected from any element of Groups IIB, IIIB, IVB, IIIA, and IVA of the Periodic Table of Elements (column 2, line 54 through column 3, line 17; Examples);

(7) wherein the hydrocarbyl group is selected from the group consisting of methyl, ethyl, propyl, vinyl allyl, and phenyl groups (column 1, lines 55-59);

(8) wherein the hydrocarbyl group is a hydrolysable functional group (column 1, lines 55-59); (9) wherein the hydrolyzable functional group comprises an alkoxy group having 1-40 carbon atoms (column 1, lines 55-59);

(12) wherein the solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 1, lines 55-59); and

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(25) wherein the substrate is selected from the group consisting of glass, metal, wood, and polymers (column 1, lines 14-25).

3. Claims 1-9, 12-20, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al (US Pat. No 5,853,896).

Regarding claims 1-9, 12-18, and 25, Kondo et al. disclose: (1) a treated article (Abstract) and (2) a method of manufacturing a treated surface (Abstract) comprising applying a hydrophobic surface treatment composition to the surface of a substrate, said composition comprising a mixture or reaction product of (i) a silicone fluid comprising an alkyl silane or a polysiloxane of the formula *see claim for formula* (Abstract); and (ii) a solvent (column 3, lines 11-36);

(3) wherein the hydrophobic surface treatment composition is substantially free of an external curing agent (column 3, lines 11-36);

(4) wherein the hydrophobic film composition further comprises a co-solvent (column 3, lines 11-36); (13) wherein the co-solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 3, lines 11-36);

(5) wherein the hydrophobic film composition further comprises a catalyst (Comparative Examples 3 & 4); (15) wherein the catalyst is an acid or a metal salt of an organic acid (Comparative Examples 3 & 4); (17) wherein the acid is selected from the group consisting of acetic acid, sulfuric acid, nitric acid, phosphoric acid, and hydrochloric acid (Comparative Examples 3 & 4);

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(6) wherein the hydrophobic film composition further comprises a co-solvent and a catalyst (Comparative Examples 3 & 4); (14) wherein the co-solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (Comparative Examples 3 & 4); (16) wherein the catalyst is an acid or a metal salt of an organic acid (Comparative Examples 3 & 4); (18) wherein the acid is selected from the group consisting of acetic acid, sulfuric acid, nitric acid, phosphoric acid, and hydrochloric acid (Comparative Examples 3 & 4);

(7) wherein the hydrocarbyl group is selected from the group consisting of methyl, ethyl, propyl, vinyl allyl, and phenyl groups (Abstract);

(8) wherein the hydrocarbyl group is a hydrolysable functional group (Abstract); (9) wherein the hydrolyzable functional group comprises an alkoxy group having 1-40 carbon atoms (Abstract);

(12) wherein the solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 3, lines 11-36); and

(25) wherein the substrate is selected from the group consisting of glass, metal, wood, and polymers (Abstract).

Regarding claims 19 and 20, Kondo et al. do not explicitly disclose (19 & 20) wherein the metal is selected from any element of Groups IIB, IIIB, IVB, IIIA, and IVA of the Periodic Table of Elements; however, this limitation is not required in claims 19 and 20. The catalyst is still open to the Markush options set forth in claims 15 and 16. Hence, these claims are anticipated.

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4. Claims 1-20, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Azzopardi et al.

Regarding claims 1-6, 12-18, and 25, Azzopardi et al. disclose: *(1)* a treated article (Abstract) and *(2)* a method of manufacturing a treated surface (Abstract) comprising applying a hydrophobic surface treatment composition to the surface of a substrate, said composition comprising a mixture or reaction product of (i) a silicone fluid comprising an alkyl silane or a polysiloxane of the formula *see claim for formula* (column 2, lines 20-62); and (ii) a solvent (column 2, lines 9-19);

(3) wherein the hydrophobic surface treatment composition is substantially free of an external curing agent (column 1, line 40 through column 4, line 62);

(4) wherein the hydrophobic film composition further comprises a co-solvent (column 2, lines 9-19); *(13)* wherein the co-solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 2, lines 9-19);

(5) wherein the hydrophobic film composition further comprises a catalyst (column 3, lines 12-20); *(15)* wherein the catalyst is an acid or a metal salt of an organic acid (column 3, lines 12-20); *(17)* wherein the acid is selected from the group consisting of acetic acid, sulfuric acid, nitric acid, phosphoric acid, and hydrochloric acid (column 3, lines 12-20);

(6) wherein the hydrophobic film composition further comprises a co-solvent and a catalyst (column 2, lines 9-19; column 3, lines 12-20); *(14)* wherein the co-solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1

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and 40 carbon atoms and water (column 2, lines 9-19); **(16)** wherein the catalyst is an acid or a metal salt of an organic acid (column 3, lines 12-20); **(18)** wherein the acid is selected from the group consisting of acetic acid, sulfuric acid, nitric acid, phosphoric acid, and hydrochloric acid (column 3, lines 12-20);

(12) wherein the solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 2, lines 9-19); and

(25) wherein the substrate is selected from the group consisting of glass, metal, wood, and polymers (column 4, lines 33-47).

Regarding claims 7-11, 19, and 20, Azzopardi et al. do not disclose the limitations pertaining to the polysiloxane; however, the polysiloxane is not required in these claims. The silicone fluid is still open to the option of alkyl silane or polysiloxane. Hence, these claims are anticipated.

5. Claims 1, 2, 4-9, 12-14, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (US Pat. No. 6,706,798).

Regarding claims 1, 2, 4-9, 12-14, and 25, Kobayashi et al. disclose: **(1)** a treated article (Abstract) and **(2)** a method of manufacturing a treated surface (Abstract) comprising applying a hydrophobic surface treatment composition to the surface of a substrate, said composition comprising a mixture or reaction product of (i) a silicone fluid comprising an alkyl silane or a polysiloxane of the formula *see claim for formula* (Abstract); and (ii) a solvent (Abstract);

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(4) wherein the hydrophobic film composition further comprises a co-solvent (column 4, lines 27-48); (13) wherein the co-solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 4, lines 27-48);

(5) wherein the hydrophobic film composition further comprises a catalyst (Abstract);

(6) wherein the hydrophobic film composition further comprises a co-solvent and a catalyst (Abstract; column 4, lines 27-48); (14) wherein the co-solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 4, lines 27-48);

(7) wherein the hydrocarbyl group is selected from the group consisting of methyl, ethyl, propyl, vinyl allyl, and phenyl groups (Abstract);

(8) wherein the hydrocarbyl group is a hydrolysable functional group (Abstract); (9) wherein the hydrolyzable functional group comprises an alkoxy group having 1-40 carbon atoms (Abstract);

(12) wherein the solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (column 4, lines 27-48); and

(25) wherein the substrate is selected from the group consisting of glass, metal, wood, and polymers (column 6, lines 1-5).

6. Claims 1-4, 7-9, 12, 13, and 25-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Akamatsu et al. (Pub. No. US: 2003/0077457).

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Regarding claims 1-4, 7-9, 12, 13, and 25-27, Akamatsu et al. disclose: *(1)* a treated article (Abstract) and *(2)* a method of manufacturing a treated surface (Abstract) comprising applying a hydrophobic surface treatment composition to the surface of a substrate, said composition comprising a mixture or reaction product of (i) a silicone fluid comprising an alkyl silane or a polysiloxane of the formula *see claim for formula* (Abstract); and (ii) a solvent (paragraphs 0081);

(3) wherein the hydrophobic surface treatment composition is substantially free of an external curing agent (Abstract);

(4) wherein the hydrophobic film composition further comprises a co-solvent (paragraph 0081); *(13)* wherein the co-solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (paragraph 0081);

(7) wherein the hydrocarbyl group is selected from the group consisting of methyl, ethyl, propyl, vinyl allyl, and phenyl groups (Abstract);

(8) wherein the hydrocarbyl group is a hydrolysable functional group (Abstract); *(9)* wherein the hydrolyzable functional group comprises an alkoxy group having 1-40 carbon atoms (Abstract);

(12) wherein the solvent includes alkyl or aryl, substituted or unsubstituted alcohols, ethers, esters, or hydrocarbon having between 1 and 40 carbon atoms and water (paragraph 0081);

(25) wherein the substrate is selected from the group consisting of glass, metal, wood, and polymers (paragraph 0084);

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(26) wherein drying is effected by evaporation at ambient temperature (paragraph 0083);

and

(27) wherein drying is effected by heating (paragraph 0083).

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 21-24 and 28-32 are rejected under 35 U.S.C. 102(b/e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious alternatively over Evans et al. (US Pat. No. 3,047,535), Kondo et al. (US Pat. No. 5,853,896), Azzopardi et al. (US Pat. No. 5,997,943), Kobayashi et al. (US Pat. No. 6,706,798), or Akamatsu et al. (Pub. No.: US 2003/0077457).

Regarding claims 21-24 and 28-32 none of these references explicitly disclose the contact angles of claims (21-24) and (28-32). However, it appears that these properties would have been inherent because these references satisfy the material limitations of these claims. It has been found that, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present – *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

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Therefore, the contact angle properties of instant claims 21-24 and 28-32 would have been inherently present in the inventions of Evans et al., Kondo et al., Azzopardi et al., Kobayashi et al. or Akamatsu et al. because these references satisfy all of the material limitations of the instant claims.

Claim Rejections - 35 USC § 103

9. Claims 4, 6, 13, 14, 16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (US Pat. No. 3,047,535).

Regarding claims 4, 6, 13, 14, 16, 18, and 20, Evans et al. disclose the use of a solvent; however, they do not explicitly disclose the use of a co-solvent.

It appears that the addition of a co-solvent is merely a matter of combining equivalents. In light of this, it has been found that, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." – *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add a co-solvent in the composition of Evans et al. because the addition of a co-solvent is merely a matter of combining equivalents.

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10. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable alternatively over Evans et al. (US Pat. No. 3,047,535), Kondo et al. (US Pat. No. 5,853,896), Azzopardi et al. (US Pat. No. 5,997,943) or Kobayashi et al. (US Pat. No. 6,706,798).

Regarding claims 26 and 27, the above references do not explicitly disclose the drying conditions set forth in claims 26 and 27.

It appears that varying of the drying technique is merely a matter of adjusting temperature. In light of this, it has been found that generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to vary the drying step according to instant claims 26 and 27, in the processes of Evans et al., Kondo et al., Azzopardi et al. or Kobayashi et al. because these limitations are merely a matter of adjusting temperature.

International Search Report

11. There were numerous X-references cited in the International Search Report. Azzopardi et al. was cited as prior art in this Office action because it was the most comprehensive of all the cited X-references.

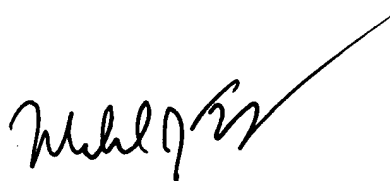
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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Michael J. Feely', with a long, sweeping horizontal line extending to the right.

Michael J. Feely
Primary Examiner
Art Unit 1712

June 27, 2005